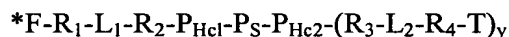


AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application. Please cancel claims 1-40, 42, 43, 45-48, 53, 58, 61, 63, 67-70, and 72-113 without prejudice. Please amend the claims as indicated below without prejudice.

1-40. (Canceled without prejudice).

41. (Currently Amended) A library consisting of a plurality of water-soluble peptidic substrates, wherein each peptidic substrate member of the library has the general formula:



wherein *F is a detectable moiety with a molecular weight of less than 5 kD;

R₁, R₂, R₃, and R₄ are each, independently: a covalent bond or a covalent linkage consisting of a branched or unbranched, substituted or unsubstituted, saturated or unsaturated chain of 1-10 carbon atoms; 0-3 heteroatoms selected from the group consisting of oxygen, nitrogen, and sulfur; and further consisting of at least one linkage chosen from the group consisting of ether, ester, hydrazone, amide, thioether, thioester, thiourea, disulfide and sulfonamide linkages;

L₁ is a branched or unbranched, water-soluble uncharged polymer selected from the group consisting of polyethylene glycol (PEG) and polysaccharides, and having a molecular weight less than about 2000 Daltons;

~~L₁ and L₂ are each, independently:~~ is a branched or unbranched, hydrophilic water-soluble uncharged polymer selected from the group consisting of polyethylene glycol (PEG) and polysaccharides, and having a molecular weight of about 80 to about 4000 Daltons;

P_{Hc1} is a peptide with the general formula $A_c(A_H)_nA_m$,

wherein A_c is selected from the group consisting of a covalent bond, ornithine, cysteine, homocysteine, cysteic acid, and lysine;

each of A_H is, independently, a charged or uncharged hydrophilic amino acid selected from the group consisting of serine, threonine, lysine, arginine, histidine, aspartic acid, glutamic acid, and cysteic acid;

n is an integer from 0 to 10;

A_m is selected from the group consisting of a covalent bond and methionine;

P_{Hc2} is a peptide with the general formula $A_m(A_H)_nA_c$,

wherein A_c if y is 1, is selected from the group consisting of a covalent bond, ornithine, cysteine, homocysteine, cysteic acid, and lysine; or, if y is 0, is a terminating group selected from the group consisting of alcohol moieties, amine moieties, ester moieties, ether moieties, carboxylic acid moieties, amide moieties, and sulfonic acid moieties;

each of A_H is, independently, a charged or uncharged hydrophilic amino acid selected from the group consisting of serine, threonine, lysine, arginine, histidine, aspartic acid, glutamic acid, and cysteic acid;

n is an integer from 0 to 10;

A_m is selected from the group consisting of a covalent bond and methionine;

P_s is a peptide from 5 to 25 amino acids in length;

T is a terminating group selected from the group consisting of alcohol moieties, amine moieties, ester moieties, ether moieties, carboxylic acid moieties, amide moieties, sulfonic acid moieties, quencher moieties, and detectable moieties;
and

y is 0 or 1.

42. (Canceled without prejudice).

43. (Canceled without prejudice).

44. (Original) The library of claim 41 wherein, for each member of the library, R₂ is attached to the C-terminus of the peptidic portion of the molecule.

45. (Canceled without prejudice).

46. (Canceled without prejudice).

47. (Canceled without prejudice).

48. (Canceled without prejudice).

49. (Original) The library of claim 41 wherein, for each member of the library, *F is selected from the group consisting of a fluorescent moiety, a chromogenic moiety, and a chemiluminescent moiety.

50. (Original) The library of claim 41 wherein, for each member of the library, *F is a fluorescent moiety.

51. (Original) The library of claim 50 wherein the fluorescent moiety is selected from the group consisting of BODIPY_{630/650} X-SE, Texas Red X-SE, BODIPY TRX-SE, Cy-dyes, Lissamine, fluorescein, rhodamine, phycoerythrin, and coumarin.

52. (Original) The library of claim 41 wherein, for each member of the library, at least one of L₁ or L₂ is polyethylene glycol.

53. (Canceled without prejudice).

54. (Currently Amended) The library of claim 41 wherein, for each member of the library, at least one of L₁ or L₂ has a molecular weight of ~~from about 100 to about 2000~~ less than about 1500 Daltons.

55. (Original) The library of claim 41 wherein, for each member of the library, at least one of L₁ or L₂ has a molecular weight of from about 500 to about 1500 Daltons.

56. (Original) The library of claim 41 wherein, for each member of the library, at least one of L₁ or L₂ has a molecular weight of from about 800 to about 1000 Daltons.

57. (Original) The library of claim 41 wherein, for each member of the library, at least one of L₁ or L₂ is a polyethylene glycol having a molecular weight from about 230 to about 2000 Daltons.

58. (Canceled without prejudice).

59. (Original) The library of claim 41 wherein, for each member of the library, R₂ comprises a thioether linkage.

60. (Withdrawn) The library of claim 41 wherein, for each member of the library, for both P_{Hc1} and P_{Hc2}, A_c is a covalent bond and n is 0 and y is not 0.

61. (Canceled without prejudice).

62. (Original) The library of claim 41 wherein, for each member of the library, for at least one of P_{Hc1} and P_{Hc2}, A_c comprises cysteine.

63. (Canceled without prejudice).

64. (Original) The library of claim 41 wherein, for each member of the library, P_{Hc1} , has a different net charge than P_{Hc2} .

65. (Original) The library of claim 41 wherein, for each member of the library, P_{Hc1} has a negative net charge and P_{Hc2} has a positive net charge.

66. (Original) The library of claim 41 wherein, for each member of the library, P_{Hc1} has a positive net charge and P_{Hc2} has a negative net charge.

67-70. (Canceled without prejudice).

71. (Original) The library of claim 41 wherein, for each member of the library, y is 0.

72-113. (Canceled without prejudice).

114. (Previously Presented) A water-soluble peptidic substrate of the general formula:

